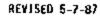
REVISED 5-7-87

FMEA NO. W 5.31.7  CRETECALITY 2/2		SHUTTLE CCTY CRITICAL ITEMS LIST	UNTT CABTE  DMG NO. 2293288-502,503  ISSUED 10-14-86  SHEET 1 0F 5
FATEURE MODE AND FAILURE EFFECT ON END ITEM		RATIONALE FOR ACCEPTANCE	
Loss of LOC B Open	No PTU control or video for locations requiring LDC 8.  Norst Case: Loss of mission critical video.	The W5 Bulkhead cable is a 60-inch long assembly, 17-cargo bay and bulkhead. The cable provides power and and returns video to the bulkhead position. The vide Twinax twisted-pair wires.  The cable design is taken from the successfully flow cable-connector assembly in which the wire terminate flexture at the joint between the wire and the connector connective length of the conductors encapsulated in a potter also protects the assembly from dirt and entrapped main space.  The cable and its components meet the applicable requirements include:  • Beneral/Nechanical/Electrical Features  • Besign and Construction  • Materials  • Terminal Solderability  • Environmental  • Qualification  • Marking and Serialization  • Traceability and Rocumentation	I commands to cargo bay camera stack to and sync wires are shielded #24 on Apollo program. The design is a case protected from excessive ctor terminal. The load ction and distributed axially along 1-taper profile. This technique disture which could cause problems

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FMEA NO. H 5.31.1 CRETICALITY 2/2		SHUTTLE CCTV CRITICAL ITEMS LIST	UNIT CABTE DUG NO. 2293288-502,503 LSSUED TO-14-86 SHEET 2 OF 5
FAILURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	HATIONALE FOR ACCEPTANCE	
FAILURE MOUE AND CAUSE  Lass of LOC 8 Open		QUALIFICATION TEST  Qualified by 1.) similarity to previous successful space programs qualification tests of CCTV LRUs.  ACCEPTANCE TEST  The cable acceptance test consists of an ohumeter check to assure connection is present and intact. Results are recorded on data sh OPERATIONAL TEST  The following tests verify that CCTV components are operable and to the PHS (A7A1) panel switch, through the RCU, through the sync line to the Camera/PTU command decoder are proper. The tests also verifability to produce video, the VSU's ability to route video and the display video. A similar test verifies the NDM command path.  Pre-Launch on Orbiter Test/In-Flight Test  1. Power CCTV System. 2. Select a nonlitor via the PHS panel, as destination and the casource. 3. Send "Camera Power On" command from PHS panel. 4. Select "External Sync" on monitor.	I space programs and 2.} by use during check to assure that each wire corded on data sheets.  The operable and that the commands from ough the sync lines to the Camera/PTU, a tests also verify the camera's ute video and the numitor's ability to ommand path.  The operable and the camera under test as 1.
		stable raster), then this indicates that the camera is receiving composite sync from the RCU and that the camera is producing synchronized video.  6. Send Pan, Tilt, Focus, Zoom, ALC, and Gamma commands and visually (either via the monitor or direct observation) verify proper operation.  7. Select Downlink as destination and camera under test as source.  8. Observe video routed to downlink.  9. Send "Camera Power Off" command via PHS panel.  10. Repeat Steps 3 through 9 except issue commands via the NOH command path. This proves that the CCTV equipment is operational if video is satisfactory.	



		UMIT Cable	
FREA NO. N 5.31.7 CRITECALITY 2/2		SHUTTLE CCTV DNG NO. 2293288-502,503 CRITICAL ITEMS LIST ISSUED 10-14-86 SHEET 3 OF 5	
FATLURE MODE AND CAUSE	FATEURE EFFECF ON END ITEM	RATIONALE FOR ACCEPTANCE	
Loss of LOC 8 Open	No PTU control or vided for locations requiring LOC 8.  Norst Case: Loss of mission critical video.	Procurement Control - Hire, connectors, solder, etc. are procured from approved wenders and supplifiers which meet the requirements set forth in the CCTV contract and Quality Plan Nork Statement (MS-2593176).  Incoming Inspection & Storage - Incoming Quality inspections are made on all received materials and parts. Results are recorded by lot and retained in file by drawing and control numbers for future reference and traceability. Accepted Items are delivered to Material Controlled Stores and retained under specified conditions until cable fabrication is required. Mon-conforming materials are held for Material Review Board (MRB) disposition. (PAI-307, PAI 10C-53).  Assembly & Test - Prior to the start of assembly, all items are verified to be correct by stock room personnel as the Items are accumulated to form a kit. The Items are verified again by the operator who assembles the kit by checking against the as-built-parts-list (ABPL).  Specific instructions are given in assembly drawing notes and applicable documents called out in the Fabrication Procedure and Record (FR-2293288). These are 280880 - Process Standard crimping flight connector contacts, 2280801 - Process Standard interconnecting wire using Raycham solder sleeves, 2280876 - Process Standard marking of parts or assemblies with epoxy colors, 2280876 - Potting material and test procedure (Tr-AT-2293288). Quality and BCAS Inspections are performed at the completion of key operations.  Preparation for Shipment - When fabrication and test is complete, the cable assembly is packaged according to 2280746, Process Standard for Packaging and Handling Guidelines. All related documentation including ossembly drawings, Parts List, ABPL, Test Bata, etc. is gathered and held in a documentation folder assigned specifically to each cable assembly. This folder is retained for reference.	

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Loss of LOC B No PT for lo Open quiri Warst	FATLURF FFFFCT	SHUTTLE CCTV CRITICAL LIENS LIST	UNIT CA61e DHG NO. 2293288-502,503 ISSUED TO-T4-86 SHEET 4 OF 5
	FATLURE EFFECT ON END TYEN TO control or wideo locations re- ing LOC 8.  Case: of mission critical	RATIONALE FOR ACCEPTANCE  FAILURE HISTORY  There have been no reported failures during RCA testing.	
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REVISED 2-17-87

FMEA NO. W 5.31.1  CRITICALITY 2/2		SHUTTLE CCTV CRITICAL ITEMS LIST	ONTT Cable DMG NO. 2293288-502,503 ISSUED 10-14-86 SHEET 5 0F 5
FATLURE MODE AND CAUSE	FAILURE EFFECT ON END ITEM	RATIONALE FOR ACCES	PTANCE
Loss of LOC 8  Open  Mo PTH cantrol or video for locations requiring LOC 8. <u>Morst Case:</u> Loss of mission critical video.		OPERATIONAL EFFECTS  Loss of video. Possible loss of major mission ob other required cameras.  CREW ACTIONS  If possible, continue RMS operations using altern CREN TRAINING  Crew should be trained to use possible alternates MISSION CONSTRAINT  Where possible procedures should be designed so the continue of the contin	ate visual cues. to CCTV.